

(GVHD) occurrence, overall survival (OS) and disease free survival (DFS) were used as main outcomes in these transplantations.

Results: Thirteen patients including 7 boys and 6 girls with mean age 5.33 years (range: 0.25-11) were detected through the data registry bank. The mean donors' age was 61.77 years (range: 45-75) and mean age difference was 56.44 years (range: 36.5-73) [Table 1]. Regarding GVHD occurrence, 10 patients did experience acute GVHD [Table 1]. With median follow-up of 16 months OS and DFS were 83% and 69% respectively.

Conclusion: Although searching the extended family for HLA-matched donors especially among grandparents seems very uncommon, this can increase the chance of well-tolerated and success transplantation especially in regions where consanguinity is common.

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Contrasting Patterns of Alloreactivity Amongst Malignant and Nonmalignant Diseases Receiving Haploidentical PBSC GRAFT and Post-Transplant Cyclophosphamide

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Haploidentical donor is often the only source of graft for most patients in developing countries due to lack of suitably matched donors from international registries and the prohibitive cost involved in the procurement process. We conducted a pilot study with posttransplant cyclophosphamide and haploidentical PBSC graft. The donors selected were either mother or NIMA mismatched siblings irrespective of NK cell alloreactivity. The conditioning protocol was developed based on Johns Hopkins regimen of Fludarabine and low-dose Cyclophosphamide pre-transplant with escalating dose Melphalan 70-140 mg/m² replacing 2 Gy TBI. Post-transplant Cyclophosphamide was administered 72hrs after infusion of the graft at 50 mg/kg twice at 24 hrs interval followed by Cyclosporine and MMF.

8 patients (median age-16, 5-43) underwent Haplo-HCT; 5 patients with refractory AML had a median BM blast count of 50% (20-80%) having failed at least two lines of treatment. Two patients had severe aplastic anemia and one had thalassemia. The ones with AML received high dose AraC and mitoxantrone from day-14 to -12. The conditioning was tolerated without any major non-hematological toxicity. The median CD34 was 7.06 x 10⁶/kg (range 5.05-11.06) and CD3 was 36 x 10⁷/kg (range 8-79).

All patients engrafted with neutrophils > 500/ μ l on day +14 (range 12-17) and platelet count > 20,000/ μ l on day +15 (range 9-38) with > 95% donor chimerism on day +30 with morphological CR. None of the patients with leukemia developed de-novo GVHD. Three relapsed between days 100-150 and two of them achieved a CR following a second transplant from the same donor. Two patients in CR died of multi-drug resistant gram-negative bacterial sepsis. All three patients with non-malignant disease developed unexpected alloreactivity. One patient with SAA developed severe

refractory HLH on day +21 and the other a periengraftment idiopathic pneumonitis. Both succumbed to their complications. Another patient with thalassemia developed severe HLH on day 60 related to EBV, whilst on treatment for grade 3 acute GVHD. In multiply treated advanced leukemia, the introduction of the PBSC graft without any immunosuppression for 72 hours probably allowed a strong GVL effect and post-transplant cyclophosphamide was successful in abrogating clinically significant GVHD. In sharp contrast, all the three patients with non-malignant disease experienced early and unexpected alloreactivity with the same protocol. We speculate that the lack of previous cytotoxic therapy might have left them vulnerable to such alloreactivity mediated by residual host APCs.

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Second Haploidentical PBSC Transplantation From the Same Donor After Early Relapse without GVHD in Patients with Acute Leukemia

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Early relapse (within 120 days) of high risk acute leukemia after any form of allogeneic HCT, augers a poor outcome. We report our experience with 4 such patients who relapsed within 120 days of undergoing a haploidentical PBSC with or without posttransplant cyclophosphamide. None developed GVHD even with prophylactic DLI. Three had relapsed refractory AML at the time of the first haploidentical HCT and one was transplanted for high risk ALL. The marrow blast count at the time of second transplant was 20-80%. The patients were conditioned with Fludarabine or Cladribine with melphalan (70 mg/m²) or oral busulfan (4mg/kg) and did not receive any GVHD prophylaxis. Cryopreserved PBSC graft was infused with CD34+ cells varying between 2-3 x 10⁶/kg. All the patients engrafted within 14 days and all developed grade 2-3 acute GVHD by day 10. GVHD was treated with steroids and etanercept along with tacrolimus and MMF. One patient succumbed early to multidrug resistant Klebsiella sepsis on day 15. The BM on day 30 in the other 3 patients showed 100 % donor chimerism with MRD levels of less than 0.1% on flow cytometry. At a short follow up of 90 days from the second haploidentical HCT, two out of three patients are alive in CR with tapering immunosuppression and the other was lost to follow up after 50 days. Our data shows that a haploidentical graft can induce a potent enough GVL effect to induce remission even in refractory leukemia. These findings highlight the fact that even if a patient with refractory leukemia relapses early after an allogeneic HCT without developing GVHD, they deserve a second graft from the same donor with minimally toxic conditioning with the purpose of inducing a GVHD/GVL effect.

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Decision Analysis of Donor Selection in Allogeneic Stem Cell Transplantation for Patients with Acute Leukemia in First Remission-Related Donor with HLA-1 Antigen Mismatch in the GVH Direction vs. HLA-8/8 Allele-Matched Unrelated Donor

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